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Provides overview of USTRANSCOM technology focus areas of interest, captures selected benefits and summarizes investment thrusts.

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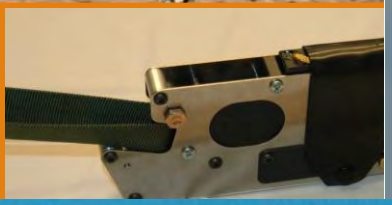
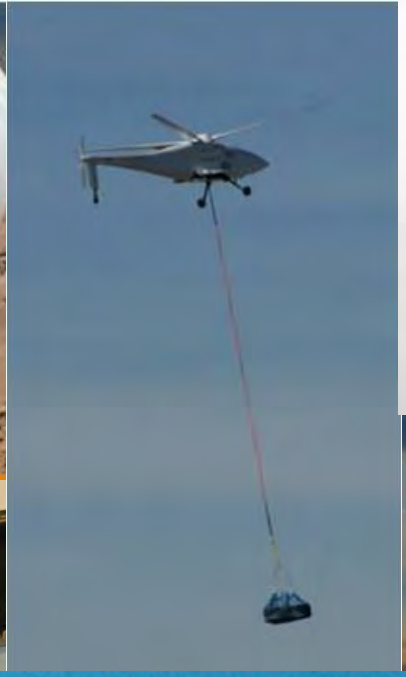
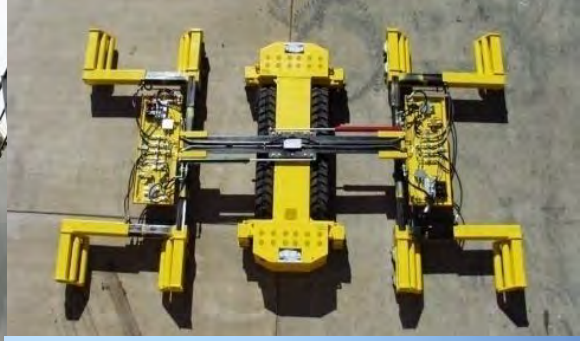
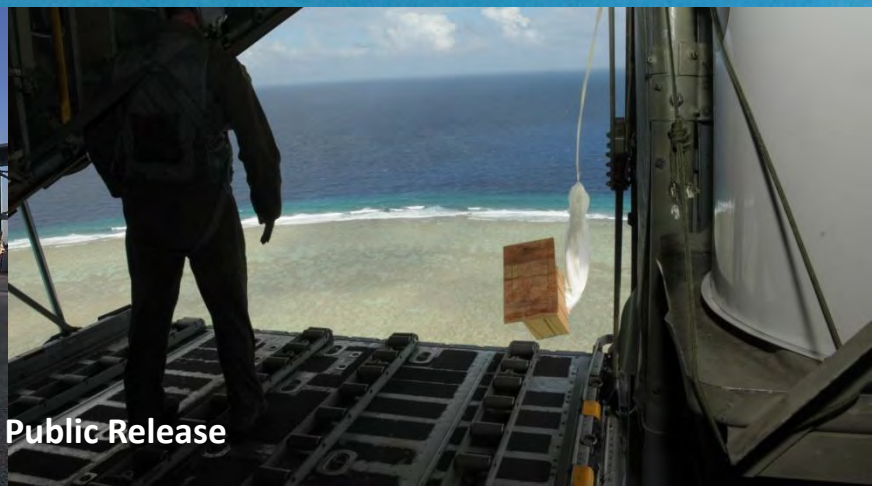




United States Transportation Command (USTRANSCOM) Research, Development, Test & Evaluation (RDT&E) Overview

Mr. Lou Bernstein

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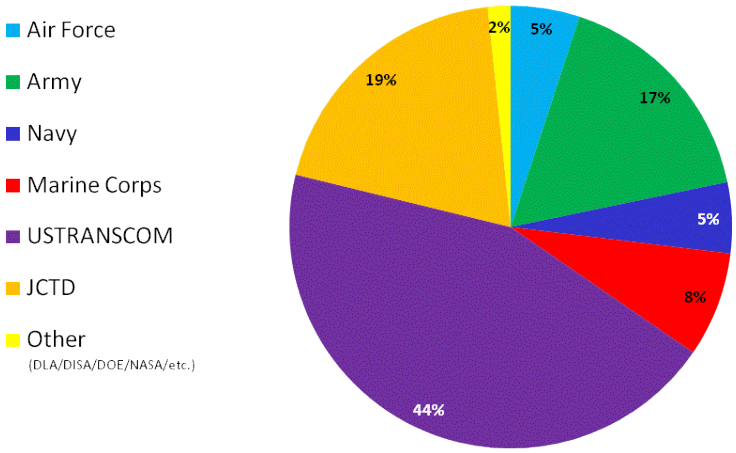
USTRANSCOM Research, Development, Test, & Evaluation (RDT&E) Goals

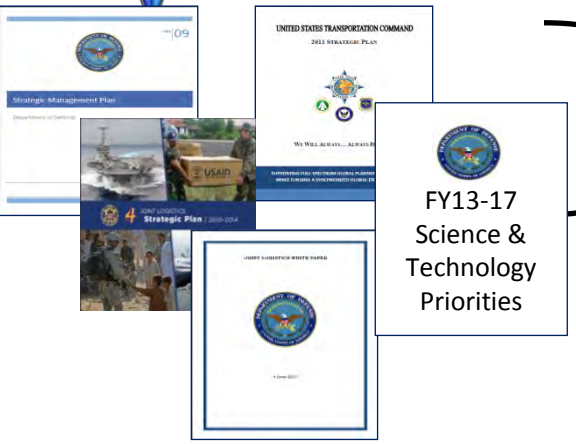
- Develop and transition joint, relevant technologies to improve warfighter support while reducing costs
- Improve the precision, reliability, velocity, and efficiency of the Joint Deployment and Distribution Enterprise
- Assure superior strategic, operational and tactical mobility support for the warfighter

USTRANSCOM RDT&E Overview

- Most projects are jointly funded with Services and Agencies
- Rapidly developing/transitioning capabilities – benefiting today's Warfighter
  - Operationalized Joint Precision Air Drop System via the Mission Planner
  - Expanded aerial delivery capabilities via Low Cost Low Altitude effort
  - Coalition Mobility System capturing coalition theater movement requirements
  - Enabled MRAP/aircraft recovery via Joint Recovery and Distribution System
  - Enhanced unit movement/deployability via Joint Modular Intermodal Container
  - Improved throughput, in theater sustainment and HA/DR support via the Defense Distribution Expeditionary Depot
- Program-wide Return on Investment ~7:1
- Funds distributed across the Joint Deployment & Distribution Enterprise (JDDE) for execution



Technology Development Objectives



FY13-17 Science & Technology Priorities

USTRANSCOM RDT&E Vision

Operational Experience

Near-Term (0-3 yrs)

- Improved Aerial Delivery
- Integrated Computing Environment
- Cargo Unmanned Air System
- AT21 Optimization/Mode Determination
- Situational Awareness & Collaboration
- Meshed Networks/Enhanced Visibility
- End-to-End Modeling
- Hybrid Lift

Mid-Term (3-5 yrs)

- Deployment & Distribution COP/Networked JDDE
- Common Computing Environment
- Integrated Distribution to Point of Consumption
- Adaptive Planning
- Joint Sea Base Enablers
- Living Plan
- Energy Conservation

Far-Term (5+ yrs)

- Sense & Respond Logistics
- Humanitarian Airdrop
- Integrated Egress/Port Efficiencies
- Cargo Threat Detection/ Protection
- Virtual Intermediate Staging Base
- Rapid/Automated Landing Sites
- Fuel/Water Alternatives

RDT&E Funding

J5/4 Role:

- Command's primary RDT&E advocate/provide overall program management
- Maintain Memorandum of Agreement with DLA to ensure fund management/execution
- Resource validated RDT&E needs
- Provide project execution oversight (J54-D chairs June annual project review)

POM:

$M	FY12	FY13	FY14	FY15	FY16	FY17
PE0603713S (D2 Enterprise)*	29.9**	30.3	30.4	30.7	31.6	32.1
PE0603264S (AT21)	1.0	3.8	7.6	7.6	7.8	N/A
Total Top Line***	30.9**	34.1	38.0	38.3	39.4	32.1

*Includes OSD's Joint C2 Adaptive Planning (i.e., JFAST Mod) add

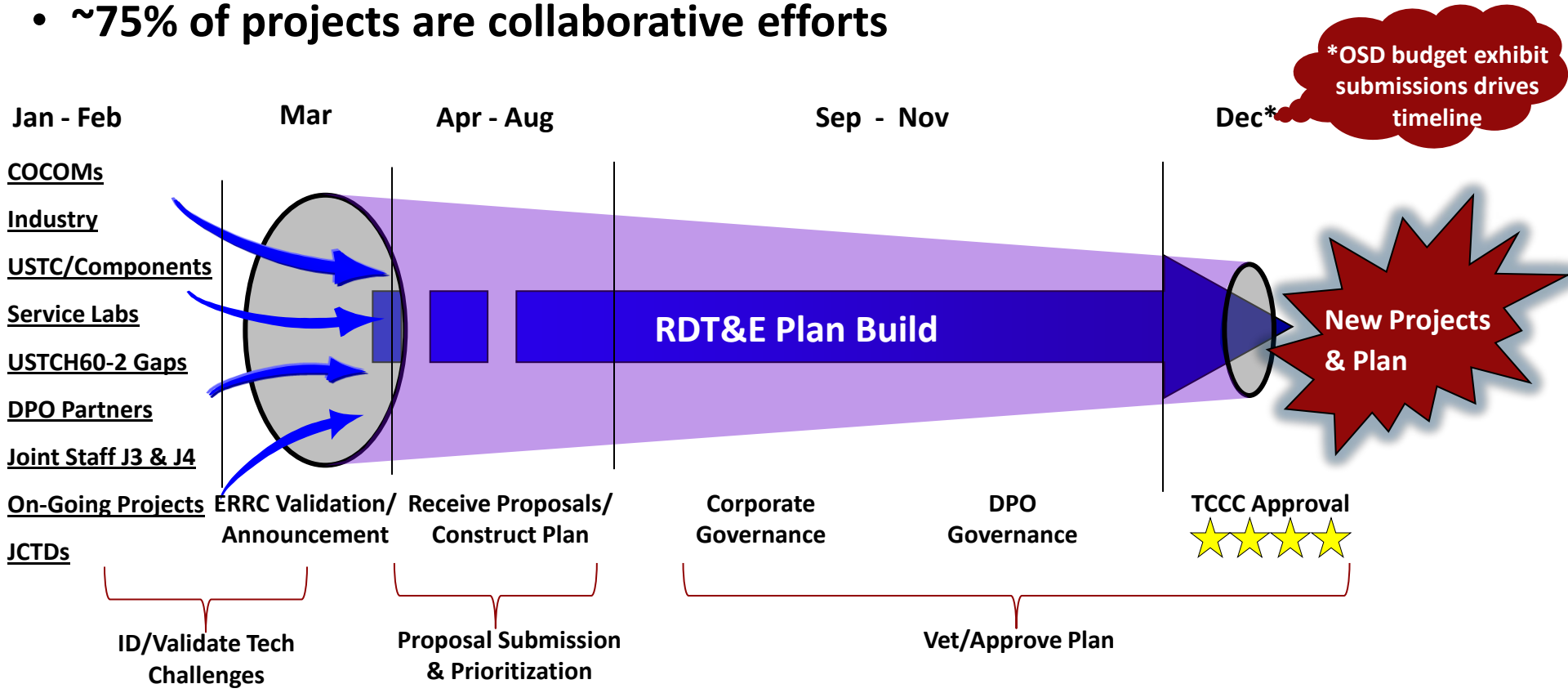
** FY12 National Defense Authorization & Appropriations Act decreased top line by $12M

***FY14-18 Integrated Priority List seeks increase to $40M/yr top line starting FY14

Leveraged over $285M in Service/OSD/Defense Agency RDT&E contributions (FY06-11)

Annual RDT&E Solicitation/Approval Timeline

- **~75% of projects are collaborative efforts**



Unfunded Requirements addressed as the need is identified

Identified by OSD(AT&L) as "model program" and #1 in DOD for transitioning new capabilities to the warfighter

Deployment & Distribution Enterprise Tech (PE0603713S) Project Areas

- **C2/Optimization/Modeling & Simulation (55%)***

  Description: Address deployment, distribution and supply chain challenges -- includes distribution process simulations/analytics; demand forecasting/execution monitoring, collaboration & synchronization; automated decision-maker support ; and resilient C2 infrastructure capabilities

- **End-to-End Visibility (9%)**

  Description: Investigate next generation Automated Information Technology/Total Asset Visibility technologies and container security to improve end-to-end distribution visibility, enhance planning/execution and transform sustainment operations

- **Cyber (6%)**

  Description: Enhance mission assurance in contested cyber environments -- includes improved surveillance, ability to continue critical network operations, determine hardware/software system trustworthiness, evoke real-time defense actuators; and rapidly return to a known/safe operating state

- **Global Access (30%)**

  Description: Explore deployment/distribution technologies to enhance velocity management, point of effect delivery and provide required global reach in austere/anti-access environments

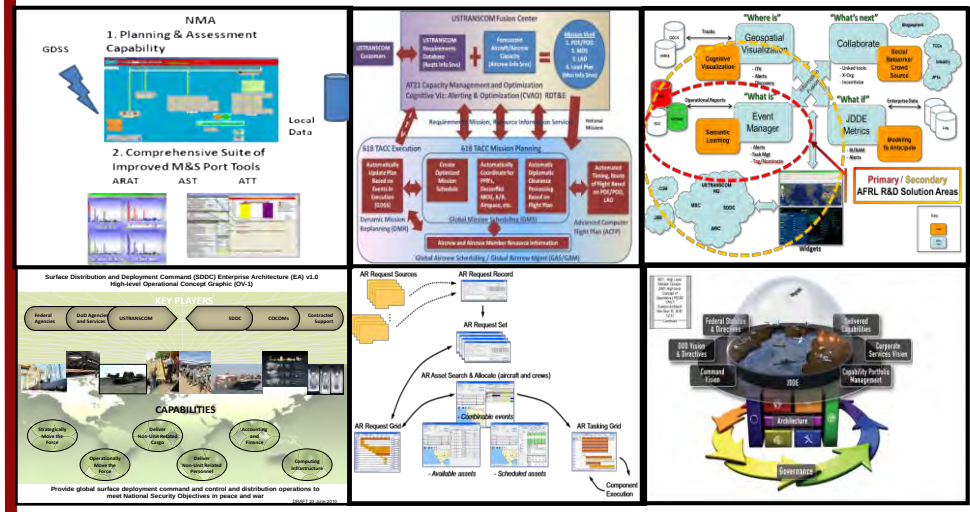
* Includes Program Mgmt/Office of Research & Tech Applications ($1.5M or ~3.4%)

Deployment & Distribution Enterprise Tech (PE0603713S)- C2/Optimization/M&S

MOTIVATION

- **GAO designated DOD supply chain mgmt as a high-risk area w/3 areas for improvement**
  - *Requirements Forecasting*
  - Asset Visibility
  - Materiel Distribution
- **Need to reduce fuel consumption**
- **USTRANSCOM's R&D investments explore technologies to address these deficiencies**
  - Documented in USTCH 60-2, IPL, S&T IPL (STIPL), AT21 Initial Capability Doc (ICD), JDDE gaps, etc.

PICTURE



TECHNICAL IDEAS

- **Key Technical Ideas**
  - Through predictive analysis, provide enterprise insight regarding customer logistics needs
  - Permit collaborative, integrated load planning
  - Support mode optimization and determination
  - Optimized/networked enterprise
  - Reduce fuel consumption via improved planning
- **Program leveraging Service/Agency efforts and invests in proven technologies**

PAYOFF

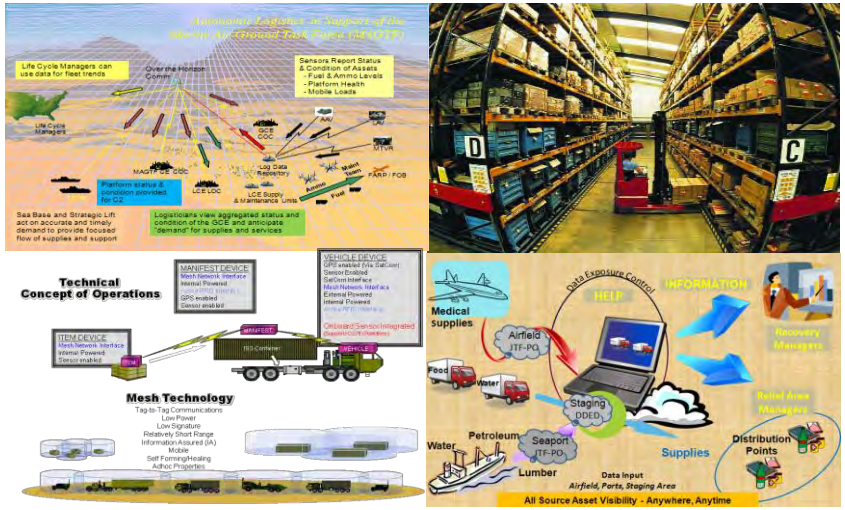
- Transform surface transportation enterprise into SOA environment (reduce development/integration/fielding time by ~50%/consolidate application functionality & data silos by ~30%)
- Provide objective/repeatable method to assess airport capacity and flow requirements (save $0.9M/yr)
- Common operational situational awareness/enterprise networked collaborative capabilities (better support via improved unity of effort)
- Optimize theater distribution (save $16.7M.yr)
- Field airlift mission scheduling tool (save $6.38M/yr)
- Optimize air refueling scheduling/execution (save <$125M/yr)
- Standardized/secure computing and production environment (20% reduction in System Admin/80% reduction in hardware refresh costs)

Deployment & Distribution Enterprise Tech (PE0603713S)- End-to-End Visibility

MOTIVATION

- **GAO designated DOD supply chain mgmt as a high-risk area w/3 areas for improvement**
  - Requirements Forecasting
  - *Asset Visibility*
  - Materiel Distribution
- **Efficient humanitarian relief operations**
- **USTRANSCOM's R&D investments explore technologies to address these deficiencies**
  - USTCH 60-2/IPL/STIPL/AT21 ICD/JDDE gaps

PICTURE



TECHNICAL IDEAS

- **Key Technical Ideas**
  - Enable cost effective global end-to-end visibility
  - Information-sharing system of non-standard relief supplies
  - Leverage sense & respond logistics to facilitate best cost transportation solutions/warfighter support
- **Program leveraging Service/Agency efforts and invests in proven technologies**

PAYOFF

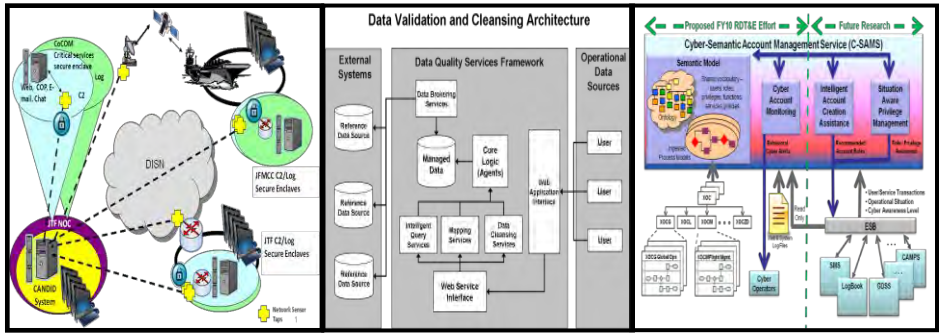
- Mature wireless networking protocols/sensor tech to enable distribution enterprise-wide asset visibility (33% lower costs versus $619M-10 yr aRFID solution)
- Determine parts failure/usage patterns and use data to initiate sustainment support actions (fulfill demand using best cost transportation solution)
- More accurate read at a greater distance of passive RFID tags (lower infrastructure costs/reduced system maintenance)
- Flexible, dynamic, web-based, simple-to-use humanitarian aid/disaster relief asset visibility system

Deployment & Distribution Enterprise Tech (PE0603713S)- Cyber

MOTIVATION

- **Secure cyber operations**
  - Very capable/persistent threat actors daily compromise DOD information
  - Require assured capability to operate in cyber space
  - Detection intrusion analysis & response
- **USTRANSCOM's R&D investments explore technologies to address these deficiencies**
  - USTCH 60-2, IPL, STIPL, and JDDE gaps

PICTURE



TECHNICAL IDEAS

- **Key Technical Ideas**
  - Differentiate between valid & unauthorized users
  - Determine hardware/software trustworthiness
  - Protect info/detect anomalies
  - Ability to operate despite cyber attack
  - Rapidly analyze networks/ID & react to attacks
  - Ability to rapidly restore operations
- **Program leveraging Service/Agency efforts and invests in proven technologies**

PAYOFF

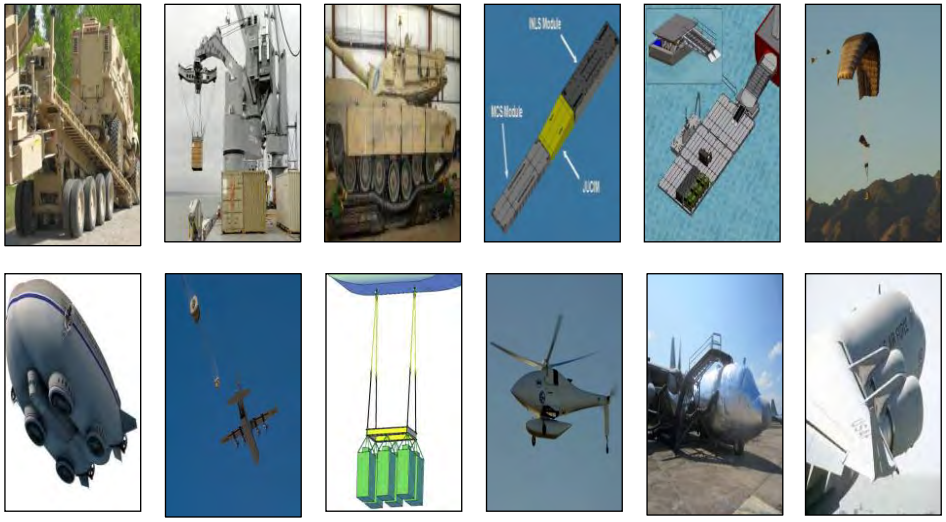
- Ability to continue critical network operations in a contested NIPR/SIPR network environments via secure enclaves
- Employ reusable web services utilizing ontology-based intelligent collaborative agent technology for data validation/correction (90% reduction in FTEs)
- Reduction of man-hours to manually review log data and identify unauthorized user access

Deployment & Distribution Enterprise Tech (PE0603713S)- Global Access

MOTIVATION

- **Investment to provide integrated global access and point of need delivery capabilities**
  - Limited ability to deliver/support the warfighter at the point of effect in austere/anti-access/urban environments
- **Enhance joint sea based sustainment operations and integrated ingress/egress**
  - Current projection/sustainment capabilities rely almost exclusively on fixed infrastructure & host nation support assets
- **USTRANSCOM IPL/STIPL, Service S&T Master Vision/ Strategy, Sea Basing Cost Benefit Analysis, Joint Urgent Operational Need Statement (JUONS)**

PICTURE



TECHNICAL IDEAS

- **Key Technical Ideas**
  - Enhance inter-modal transfer
  - Transfer fully loaded containers at sea
  - Enhanced sea base connectors/interfaces
  - Improved accuracy/lower costs of air drop operations
  - High speed, low level, robust, precision resupply
  - Alternative air delivery (unmanned systems/hybrid)
  - Ability to continue mobility operations in an asymmetric (chemical/biological) environment
- **Program invests in proven technologies and leverages Service efforts to address JDDE validated gaps/need**

PAYOFF

- Safely move/recover aircraft, vehicles & containers
- Transfer 20ft containers in Sea State 4 (key sea base enabler)
- Unmanned aerial cargo aerial (enhanced support at point of need)
- Optimize causeway systems (save $246M replacement capability)
- Offload com'l cargo vessels at sea (reduced sealift recap bill)
- Hybrid airlift - risk reduction efforts to support future demonstration
- Enhanced airdrop accuracy (<50m) (reduction in ground recovery ops; minimizes troop exposure)
- High speed container aerial delivery (70% reduction in exposure to ground threat due fast ingress/egress)
- Helo delivery of airdrop bundles (increased agility/enhanced aircrew/helo safety and reduction in ground convoys)

Sample Capabilities Delivered

- **Joint Modular Intermodal Container:** $16M/yr savings in cardboard uni-pack
- **Defense Distribution Expeditionary Depot**
  - Significant reduction in military inter-theater airlift for Defense Logistics Agency managed items
  - Customer Wait Time reduced from 19.8 days to 10.8 days
- **Coalition Mobility System:** 100% ROI within 2 years and $2.3M/yr thereafter
- **Common Operating Picture (Deployment and Distribution)**
  - Identified top 100 heaviest airlifted items saving $54M annually in transportation costs
  - Delivered initial Distribute.mil capabilities (i.e., workspace mgmt, collaboration, etc.)
- **Joint Precision Air Drop System**
  - Mission Planner: Dramatically improved accuracy/operationalized capability (>200Mlbs delivered since Aug 06)
  - 80% reduction in recovery operations
  - Reduce improvised explosive device exposed convoys, safer recovery ops, increased personnel survivability
- **Low Cost Low Altitude:** Reduce airdrop asset recovery/improve safety (fewer grnd convoys)
- **Joint Recovery and Distribution System:** Dozen of missions completed in Afghanistan/>100 vehicles in various stages of procurement
- **Enterprise Integration Lab:** Mitigating technical risk/accelerating capability fielding via comprehensive functional and certification & accreditation testing
- **Wireless Gate Release System**
  - Doubles C-130 delivery capacity (saving fuel/aircraft wear & tear/associated costs)
  - Eliminates bundle damage due leap-frogging (effects 20% of airdropped bundles)
  - Working with AMC to move above POM cut line

USTRANSCOM RDT&E Portal: www.ustranscom.mil